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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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Office Action Summary	Application No.	Applicant(s)
	10/681,164	SHIEH ET AL.
	Examiner	Art Unit
	Vineeta S. Panwalkar	2611

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 September 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-9,11-15 and 17-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3,5-9,11-15 and 17-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *09 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Response to Argument

1. Applicant's arguments filed 9/4/07 have been fully considered but they are not persuasive.

1a. Regarding amended claims 1 and 8, applicant argues that Rajkumar et al. (US 2004/0264454 A1, hereinafter, Rajkumar), fails to show or suggest "negotiating a number of information bits in a packet between the base station and the mobile unit" because Rajkumar shows negotiating the number of packets to be used to form the aggregated packet, rather than the number of bits of a single packet, as claimed.

However, primarily, it is pointed out that the aggregated packet is still, in fact, a packet. Secondly, all packets are inherently comprised of information bits and hence Rajkumar's negotiation of the size of the aggregated packet reads on the claimed limitation "negotiating a number of information bits in a packet". Further, it is pointed out that all claims are interpreted in light of the specification. All throughout the specification, applicant uses the term "negotiating a size of information bits" rather than "negotiating a number of information bits" as per amended claims 1 and 8. Hence, in light of the specification, it appears as if applicant's claimed "number" is equivalent to "size" (as disclosed by Rajkumar). Further, since packets inherently comprise bits, Rajkumar's negotiating of size of aggregated packet (Paragraphs [0011] and [0018]) is interpreted as the negotiating of amended claims 1 and 8.

1b. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Thus, applicant admits that Kim et al Kim et al. (US 2002/0013926 A1, hereinafter, Kim) TFCI bits and that one of ordinary skill ion the art would be motivated to use the TFCI bits in order to minimize frame error and hence, all the limitations of the claims are addressed by combining the teachings of Kim with teachings of other references as shown below.

1c. Further, applicant argues that Le Bars et al. (US 2002/0041640 A1, hereinafter, Le bars) show negotiating the bit rate per symbol and that his would not affect the size of the transmission. However, it is pointed out that bit rate is nothing but the rate at which bits are transmitted i.e. the number of bits to be transmitted per symbol. Thus, it is pointed out that contrary to applicant's argument, Le Bars did indeed disclose said limitations of claims 13 and 19. Further, it is pointed out that a packet is nothing but a collection of bits. A symbol is also a collection of bits and hence can be interpreted as a packet. Therefore, Le Bars disclosure also shows limitations of amended claim 13.

1d. In view of applicant's amendment, the 35 U.S.C. 112, second paragraph rejection of claims 8-12 is withdrawn.

1e. The indicated allowability of claims 2, 9, 15 and 20 is withdrawn in view of the newly discovered reference(s) to Lozano et al. (US 6778612 B1, hereinafter, Lozano) Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1, 3, 5 and 6 rejected under 35 U.S.C. 103(a) as being unpatentable over Rajkumar (previously cited), in view of Tan (previously cited) and Kim (Previously cited).

2a. Regarding claim 1, Rajkumar shows a communications method, comprising:

- communicating between a base station and a mobile unit (Paragraph [0028]);
- negotiating a number of information bits included in a packet between the base station and the mobile unit (Paragraphs [0011] and [0018]. The aggregated packet is interpreted as claimed packet because it is, in fact, a packet and packets inherently comprise information bits.);
- encoding the information bits according to a code (Paragraph [0022]. The signal encoder performs claimed encoding);
- transmitting the encoded information bits with the negotiated number between the base station and the mobile unit (Pararaphs [0019] and [0022] . The transmit equipment performs claimed transmitting based on user service requirements and after having negotiated a packet size with receiving equipment.);
- decoding the transmitted information bits (Paragraph [0032]).

Thus, Rajkumar shows all the limitations claimed, but fails to explicitly disclose the transformation to reduced order, as claimed and the transport format combination index (TFCI) encoded information bits.

However, in the same field of endeavor, Tan shows a communication method between a mobile unit and a base station comprising:

- transforming the transmitted information bits with a reduced order (Paragraph [0009]. The column and row reduced matrices (GO-CDMA matrices) are interpreted as claimed reduced order information bits.)

Thus, it would have been obvious to a person of ordinary skill in the art to use the reduced matrix (or GO-CDMA) codes because these improve the performance of the system (Abstract) and achieve improved error correction (Paragraph [0091]).

Also in the same field of endeavor, Kim shows communication method between a base station and a mobile unit (Paragraph [0007]) comprising:

- a transport format combination index (TFCI) encoded information bits transmitted between the base station and the mobile unit (Paragraph [0003]);

Thus, it would have been obvious to a person of ordinary skill in the art to use Kim's method of using TFCI bits as the information bits of Rajkumar because it minimizes frame error rate of the error correction encoder (Paragraph [0013]).

2b. Regarding claim 3, Rajkumar, Tan and Kim show all the limitations claimed (See 2a above).

Further, Kim shows communication method between a base station and a mobile unit (Paragraph [0007] comprising:

- permuting the information bits and depermuting the transmitted information bits (Fig. 9, paragraphs [0039] and [0082]. A sequence obtained by column permuting the specific sequence will be referred to as a "mask function" (or mask sequence). The multiplier 901 multiplies the received signal r(t) by the mask function M1 output from the mask generator 910, and provides its output to a correlation calculator 921. Since the mask function is used at the receiver side and aides in the decoding process, the application of the mask function at the receiver is interpreted as claimed depermuting).

Thus, it would have been obvious to a person of ordinary skill in the art to use Kim's method of permuting and depermuting because it minimizes frame error rate of the error correction encoder (Paragraph [0013]).

2c. Regarding claim 5, Rajkumar, Tan and Kim show all the limitations claimed (See 2a above). Tan further shows method wherein:

- the transmitted information bits are transformed with the reduced order using Hadamard transform. (Paragraph [0009], and [0091] – [0101] and abstract. The column and row reduced matrices (GO-CDMA matrices) are interpreted as claimed reduced order. The reduced order of the matrices is inherently determined. The means performing the transformation are interpreted as claimed transformer. Since the transformer uses Hadamard orthogonal matrices, it is interpreted as performing claimed Hadamard transform).

Thus, it would have been obvious to a person of ordinary skill in the art to use the reduced matrix (or GO-CDMA) codes using Hadamard transform because these improve the performance of the system (Abstract) and achieve improved error correction (Paragraph [0091]).

2d. Regarding claim 6, Rajkumar, Tan and Kim show all the limitations claimed (See 2a above).

Further, Kim shows communication method between a base station and a mobile unit (Paragraph [0007] wherein:

- the information bits are encoded according to Reed-Muller codes(Paragraphs [0011] and [0012]);

Thus, it would have been obvious to a person of ordinary skill in the art to use Kim's method of Reed-Muller encoding because it minimizes frame error rate of the error correction encoder (Paragraph [0013]).

3. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable Rajkumar in view of Tan and Kim as applied to claim 1 above, and further in view of Lozano.

3a. Regarding claim 2, Rajkumar, Tan and Kim disclose all the limitations claimed (See 2a above). Kim further shows the step of generating correlation values for the received bits and calculating at least one maximum value from the generated correlation values (paragraph [0084]).

Thus, Rajkumar, Tan and Kim disclose all the limitations claimed, but fail to explicitly show regenerating the negotiated number based on the maximum value.

However, in the same field of endeavor, Lozano shows negotiation of data rate from time to time (interpreted as claimed re-negotiating of size because data rate is nothing but amount of data to be sent) based and the connection between correlation and data rate

Thus, it would have been obvious to a person of ordinary skill in the art to base the re-negotiation on the maximum value of correlation so as to ensure maximum data rate. (Column 3, lines 59-64, wherein is disclosed that the more correlated the channel, the larger the data rate).

4. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable Rajkumar in view of Tan and Kim as applied to claim 1 above, and further in view of Müller (US 6490461 B1, previously cited), hereinafter, Muller.

4a. Regarding claim 7, Rajkumar, Tan and Kim show all the limitations claimed (See 2a above), but fail to explicitly disclose a wideband code division multiple access (WCDMA) implementation.

However, in the same field of endeavor, Muller shows communication between a base station and mobile station as a WCDMA implementation (Fig. 4, column 3, lines 26-38).

Thus, it would have been obvious to a person of ordinary skill in the art to use a WCDMA implementation because WCDMA provides wide bandwidth for multimedia services and other high transmission rate demands as well as robust features like diversity handoff and RAKE receivers to ensure high quality (Column 1, lines 54-57).

5. Claims 8 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Rajkumar in view of Tan.

5a. Regarding claim 8, Kim shows a communication method (Paragraph [0007]) comprising;

- communicating between a base station and a mobile unit (Paragraph [0007]);
- information bits that are transport format combination index bits(TFCI) (Paragraph [0003]);
- encoding the information bits according to Reed-Muller codes (Paragraphs [0011] and [0012]);
- permuting the encoded information bits permuting the encoded information bits (Paragraph[0039]);
- transmitting the encoded information bits between the base station and the mobile unit(Paragraphs [0007], [0039] and [0040]. The transmitting of encoded and permuted TFCI bits is interpreted as claimed encoding);

- depermuting the transmitted information bits (Fig. 9, paragraphs [0039] and [0082]. A sequence obtained by column permuting the specific sequence will be referred to as a "mask function" (or mask sequence). The multiplier 901 multiplies the received signal r(t) by the mask function M1 output from the mask generator 910, and provides its output to a correlation calculator 921. Since the mask function is used at the receiver side and aides in the decoding process, the application of the mask function at the receiver is interpreted as claimed depermuting);
- and decoding the transmitted information bits(Fig. 9, Paragraph [0082]).

Thus, Kim shows all the limitations claimed, but fails to disclose the step of negotiation of number of bits and the transformation to reduced order, as claimed.

.However, in the same field of endeavor, Rajkumar shows method for communicating between a base station and a mobile unit ((Paragraph [0028]) comprising:

- negotiating a number of bits of information bits included in a packet between the base station and the mobile unit (Paragraphs [0011] and [0018]. The aggregated packet is interpreted as claimed packet because it is, in fact, a packet and packets inherently comprise information bits.).

Thus, it would have been obvious to a person of ordinary skill in the art to use a negotiated packet size for transmission because it improves the overall capacity of the communication system (Paragraph [0011]).

Also in the same field of endeavor, Tan shows a communication method between a mobile unit and a base station comprising:

- determining a reduced order according to the negotiated number and a reduced search space and transforming the depermuted information bits with the reduced order and the reduced search space (Paragraph [0009], and [0091] –[0101]. The column and row reduced matrices (GO-CDMA matrices) are interpreted as claimed reduced order. The reduced order of the matrices is inherently determined.)

Thus, it would have been obvious to a person of ordinary skill in the art to use the reduced matrix (or GO-CDMA) codes because these improve the performance of the system (Abstract) and achieve improved error correction (Paragraph [0091]).

5b. Regarding claim 11, Kim, Rajkumar and Tan show all the limitations claimed (See 5a above). Tan further shows method wherein:

- the transmitted information bits are transformed with the reduced order using Hadamard transform. (Paragraph [0009], and [0091] –[0101] and abstract. The column and row reduced matrices (GO-CDMA matrices) are interpreted as claimed reduced order. The reduced order of the matrices is inherently determined. The means performing the transformation are interpreted as claimed transformer. Since the transformer uses Hadamard orthogonal matrices, it is interpreted as performing claimed Hadamard transform).

Thus, it would have been obvious to a person of ordinary skill in the art to use the reduced matrix (or GO-CDMA) codes using Hadamard transform because these improve the performance of the system (Abstract) and achieve improved error correction (Paragraph [0091]).

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Rajkumar and Tan as applied to claim 8 above, and further in view of Lozano.

6a. Regarding claim 9, Kim, Rajkumar and Tan disclose all the limitations claimed (See 5a above).

Kim further shows the step of generating correlation values for the received bits and calculating at least one maximum value from the generated correlation values (paragraph [0084]).

Thus, Kim, Rajkumar and Tan disclose all the limitations claimed, but fail to explicitly show regenerating the negotiated number based on the maximum value.

However, in the same field of endeavor, Lozano shows negotiation of data rate from time to time (interpreted as claimed re-negotiating of size because data rate is nothing but amount of data to be sent) based and the connection between correlation and data rate

Thus, it would have been obvious to a person of ordinary skill in the art to base the re-negotiation on the maximum value of correlation so as to ensure maximum data rate. (Column 3, lines 59-64, wherein is disclosed that the more correlated the channel, the larger the data rate).

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Rajkumar and Tan as applied to claim 8 above, and further in view of Muller.

7a. Regarding claim 12, Kim, Rajkumar and Tan show all the limitations claimed (See 5a above), but fail to explicitly disclose a wideband code division multiple access (WCDMA) implementation.

However, in the same field of endeavor, Muller shows communication between a base station and mobile station as a WCDMA implementation (Fig. 4, column 3, lines 26-38).

Thus, it would have been obvious to a person of ordinary skill in the art to use a WCDMA implementation because WCDMA provides wide bandwidth for multimedia services and other high transmission rate demands as well as robust features like diversity handoff and RAKE receivers to ensure high quality (Column 1, lines 54-57).

8. Claims 13, 14, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Bars (previously cited), in view of Tan and Kim.

8a. Regarding claim 13, Le Bars shows a wireless system (Fig. 8) (The limitation in the preamble about the system being a WCDMA system does not breathe life into the claim and has therefore not been given any patentable weight) comprising:

- a base station; a mobile unit, wherein a number of information bits included in a packet is negotiated between the base station and the mobile unit (Fig. 8 shows a wireless system. Base stations and mobile units are an inherent part of wireless systems. Paragraphs [0014] –[0016]. A negotiated of the bit rate per symbol is performed which inherently indicates the number of bits in a the symbol and thus is interpreted as claimed negotiation. This is because bit rate is nothing but the rate at which bits are transmitted i.e. the number of bits to be transmitted per symbol. Since a packet is nothing but a collection of bits, the symbol is interpreted as claimed packet);
- an encoder encoding the information bits, wherein the encoded information bits are transmitted between the base station and the mobile unit with the negotiated size (Fig. 1, Paragraphs [004] and [0014]);
- a maximum likelihood (ML) decoder decoding the information bits (Fig. 2, turbo decoder performs claimed decoding. (Paragraphs [004] and [0014])).

Thus, Le Bars shows all the limitations claimed, but fails to explicitly disclose the claimed transformer and the transport format combination index (TFCI) encoded information bits.

However, in the same field of endeavor, Tan shows a communication method between a mobile unit and a base station comprising:

- a transformer transforming the transmitted information bits with a reduced order determined according to the negotiated number and a reduced search space; (Paragraph [0009], and [0091] –[0101]. The column and row reduced matrices (GO-CDMA matrices) are interpreted as claimed reduced order. The reduced order of the matrices is inherently determined. The means performing the transformation are interpreted as claimed transformer).

Thus, it would have been obvious to a person of ordinary skill in the art to use the reduced matrix (or GO-CDMA) codes because these improve the performance of the system (Abstract) and achieve improved error correction (Paragraph [0091]).

Also in the same field of endeavor, Kim shows communication method between a base station and a mobile unit (Paragraph [0007] comprising:

- a transport format combination index (TFCI) encoded information bits transmitted between the base station and the mobile unit (Paragraph [0003]);

Thus, it would have been obvious to a person of ordinary skill in the art to use Kim's method of using TFCI bits as the information bits of Le Bars because it minimizes frame error rate of the error correction encoder (Paragraph [0013]).

8b. Regarding claim 14, Le Bars, Tan and Kim show all the limitations claimed (See 8a above).

Further, Kim shows communication method between a base station and a mobile unit (Paragraph [0007] comprising:

- a permuter permuting the information bits and a depermuter depermuting the transmitted information bits (Fig. 9, paragraphs [0039] and [0082]. A sequence obtained by column permuting the specific sequence will be referred to as a "mask function" (or mask sequence). The multiplier 901 multiplies the received signal r(t) by the mask function M1 output from the mask generator 910, and provides its output to a correlation calculator 921. Since the mask function is used at the receiver side and aides in the decoding process, the application of the mask function at the receiver is interpreted as claimed depermuting).

Thus, it would have been obvious to a person of ordinary skill in the art to use Kim's method of permuting and depermuting because it minimizes frame error rate of the error correction encoder (Paragraph [0013]).

8c. Regarding claim 17 Le Bars, Tan and Kim show all the limitations claimed (See 8a above). Tan further shows method wherein:

- the transformer comprising a Hadamard transforer. (Paragraph [0009], and [0091] –[0101] and abstract. The column and row reduced matrices (GO-CDMA matrices) are interpreted as claimed reduced order. The reduced order of the matrices is inherently determined. The means performing the transformation are interpreted as claimed transformer. Since the transformer uses Hadamard orthogonal matrices, it is interpreted as claimed Hadamard transformer).

Thus, it would have been obvious to a person of ordinary skill in the art to use the reduced matrix (or GO-CDMA) codes using Hadamard transform because these improve the performance of the system (Abstract) and achieve improved error correction (Paragraph [0091]).

8d. Regarding claim 18, Le Bars, Tan and Kim show all the limitations claimed (See 8a above).

Kim also shows communication method between a base station and a mobile unit (Paragraph [0007]) wherein:

- the information bits are encoded according to Reed-Muller codes(Paragraphs [0011] and [0012]);

Thus, it would have been obvious to a person of ordinary skill in the art to use Kim's method of Reed-Muller encoding because it minimizes frame error rate of the error correction encoder (Paragraph [0013]).

9. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Le Bars in view of Tan and Kim as applied to claim 13 above, and further in view of Lozano.

9a. Regarding claim 9, Le Bars, Tan and Kim disclose all the limitations claimed (See 8a above).

Kim further shows the step of generating correlation values for the received bits and calculating at least one maximum value from the generated correlation values (paragraph [0084]).

Thus, Le Bars, Tan and Kim disclose all the limitations claimed, but fail to explicitly show regenerating the negotiated number based on the maximum value.

However, in the same field of endeavor, Lozano shows negotiation of data rate from time to time (interpreted as claimed re-negotiating of size because data rate is nothing but amount of data to be sent) based and the connection between correlation and data rate

Thus, it would have been obvious to a person of ordinary skill in the art to base the re-negotiation on the maximum value of correlation so as to ensure maximum data rate. (Column 3, lines 59-64, wherein is disclosed that the more correlated the channel, the larger the data rate).

10. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Le Bars and Tan.

10a. Regarding claim 19, Kim shows a decoder (Fig. 9, Paragraph [0082]) in a communications system (Paragraph [0007]) having an encoder (Paragraphs

[0011] and [0012]) encoding information bits for transmission between a base station and a mobile unit, the decoder comprising:

- a transport format combination index (TFCI) encoded information bits transmitted between the base station and the mobile unit (Paragraph [0003]);
- a depermuter depermuting the transmitted information bits (Fig. 9, paragraphs [0039] and [0082]. A sequence obtained by column permuting the specific sequence will be referred to as a "mask function" (or mask sequence). The multiplier 901 multiplies the received signal r(t) by the mask function M1 output from the mask generator 910, and provides its output to a correlation calculator 921. Since the mask function is used at the receiver side and aides in the decoding process, the application of the mask function at the receiver is interpreted as claimed depermuting and the means performing the depermuting are interpreted as claimed depurmuter);

Thus, Kim shows all the limitations claimed. Kim further shows a decoder for decoding the signal (Fig.9), but fails to disclose if the decoder is a maximum likelihood decoder. Kim also fails to mention the negotiation of size step, the use of the Hadamard transformer.

In the same field of endeavor, however, Le Bars shows a wireless system (Fig. 8) comprising:

- a base station; a mobile unit, wherein a size of information bits is negotiated between the base station and the mobile unit (Fig. 8 shows a wireless system. Base stations and mobile units are an inherent part of wireless systems. Paragraphs [0014] –[0016]. A negotiated of the bit rate per symbol is performed which inherently indicates the size of the symbol and thus is interpreted as claimed negotiation);

- a maximum likelihood (ML) decoder decoding the information bits (Fig. 2, turbo decoder performs claimed decoding. (Paragraphs [004] and [0014])).

Thus, Kim and Le Bars show all the limitations claimed, but fails to explicitly disclose the claimed transformer.

Again, in the same field of endeavor, Tan shows a communication method between a mobile unit and a base station comprising:

- a Hadamard transformer transforming the information bits with a reduced order (Paragraph [0009], and [0091] –[0101] and abstract. The column and row reduced matrices (GO-CDMA matrices) are interpreted as claimed reduced order. The reduced order of the matrices is inherently determined. The means performing the transformation are interpreted as claimed transformer. Since the transformer uses Hadamard orthogonal matrices, it is interpreted as claimed Hadamard transformer).

Thus, it would have been obvious to a person of ordinary skill in the art to use the reduced matrix (or GO-CDMA) codes because these improve the performance of the system (Abstract) and achieve improved error correction (Paragraph [0091]).

11. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Le Bars and Tan as applied to claim 19 above, and further in view of Lozano.

11a. Regarding claim 20, Kim, Le Bars and Tan disclose all the limitations claimed (See 10a above).

Kim further shows the step of generating correlation values for the received bits and calculating at least one maximum value from the generated correlation values (paragraph [0084]).

Thus, , Kim, Le Bars and Tan disclose all the limitations claimed, but fail to explicitly show regenerating the negotiated number based on the maximum value.

However, in the same field of endeavor, Lozano shows negotiation of data rate from time to time (interpreted as claimed re-negotiating of size because data rate is nothing but amount of data to be sent) based and the connection between correlation and data rate

Thus, it would have been obvious to a person of ordinary skill in the art to base the re-negotiation on the maximum value of correlation so as to ensure maximum data rate. (Column 3, lines 59-64, wherein is disclosed that the more correlated the channel, the larger the data rate).

12. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kim in view of Le Bars and Tan as applied to claim 19 above, and further in view of Muller.

12a. Regarding claim 21, Kim, Le Bars and Tan show all the limitations claimed (See 10a above), but fail to explicitly disclose a wideband code division multiple access (WCDMA) implementation.

However, in the same field of endeavor, Muller shows communication between a base station and mobile station as a WCDMA implementation (Fig. 4, column 3, lines 26-38).

Thus, it would have been obvious to a person of ordinary skill in the art to use a WCDMA implementation because WCDMA provides wide bandwidth for multimedia services and other high transmission rate demands as well as robust features like diversity handoff and RAKE receivers to ensure high quality (Column 1, lines 54-57).

Contact Information

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vineeta S. Panwalkar whose telephone number is 571-272-8561. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VP

MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER